

Claims

[c1] I claim:

1. In a disc brake having a support member secured to a vehicle, said support member having first and second guides to align a caliper over a rotor associated with a wheel of a vehicle, said caliper having an actuation section connected by a bridge to an arm, said actuation section having a bore therein for retaining a piston to define an actuation chamber, a first friction member connected to said piston and a second friction member connected to said arm, said actuation chamber on being presented pressurized fluid from a source acting on said piston and actuation section to develop a dynamic clamping force for moving said first and second friction members into engagement with said rotor to effect a brake application, and said piston being prevented from rotating with respect to said second friction member by means of anti rotation members engaged with said piston, a locking mechanism characterized by having a first threaded member integrally attached to said piston, a second threaded member able to rotate in said bore having a plurality of teeth at a closed end of said bore, and means for moving a third member into engagement with

said teeth on second threaded member to affect a parking brake application by prevent rotation of said second threaded member and thereby holding said friction members in engaged with said rotor, said second threaded member being retained in the closed end of said bore by a retaining ring in engaged in a groove in said bore holding a preloaded wave washer against a bearing thrust washer loading a first thrust bearing against a first face of said second threaded member adjacent to said piston, and a second thrust bearing engaging a second face of said second threaded member adjacent to closed end of said bore, said second threaded member rotating as said piston moves said friction members into engagement with said rotor.

[c2] 2. In the disc brake recited in claim 1, wherein said actuation chamber being presented pressurized fluid from a source acting on said piston and actuation section to develop a dynamic clamping force for initially moving said first and second friction members into engagement with said rotor to effect a service brake application, and in an absence of pressurized fluid said locking mechanism maintaining said piston and the actuation section in said clamping position to provide a parking brake mode.

[c3] 3. In a disc brake having a locking mechanism characterized by a first threaded member integrally attached to a

piston located in a bore, said piston being moved within said bore to establish a clamping force and being prevented from rotating with respect to the bore by means of anti rotation members on the friction member in contact with the piston; a second threaded member rotating on said first threaded member with piston movement and having teeth thereon; and means for moving a third member into contact with said teeth on said second threaded member to prevent rotation of said second threaded member and retaining clamping force on said friction members to affect a parking brake application.

[c4] 4. In the disc brake as recited in claim 3 said locking mechanism adjusts for wear in said first and second friction members and enables the locking mechanism to retain clamping force throughout the useful life of the friction members.

[c5] 5. In a disc brake having a support member secured to a vehicle, said support member having first and second guides to align a caliper over a rotor associated with a wheel of the vehicle, said caliper having an actuation section connected by a bridge to an arm, said actuation section having a bore therein for retaining a piston to define an actuation chamber, a first friction member being connected to said piston and a second friction member being connected to said arm, said actuation chamber

upon being presented pressurized fluid from a source acts on said piston and said actuation section to develop a dynamic clamping force for moving said first and said second friction members into engagement with said rotor to effect a service brake application, a first shaft having inner and outer surfaces with a face retained between a plurality of thrust bearings, said inner surface of said first shaft threadedly engages a second shaft, said second shaft having a first end threadedly engaging said inner surface of said first shaft and a second end fixed to said piston, said outer surface of said first shaft being located between said plurality of thrust bearings and having a plurality of protrusions thereon for selective engagement with a locking mechanism to maintain said dynamic clamping force to effect a parking brake application.

[c6] 6. The parking brake as set forth in claim 5 wherein said locking mechanism mechanically interlocks with said plurality of protrusions on said outer surface of said first shaft to prevent rotation of said first shaft and maintain said dynamic clamping force.

[c7] 7. The parking brake as set forth in claim 5 wherein said locking mechanism includes an engagement surface for mechanically interlocking with said plurality of protrusions on said outer surface of said first shaft.

- [c8] 8. The parking brake as set forth in claim 7 wherein said engagement surface includes a plurality of protrusions for mechanical interlocking with said plurality of protrusions on said outer surface of said first shaft.
- [c9] 9. The parking brake as set forth in claim 6 wherein said locking mechanism is actuated by an electronic means.
- [c10] 10. The parking brake as set forth in claim 9 wherein said electronic means maintains mechanical interlocking engagement with said plurality of protrusions on said surface of said first shaft to prevent rotation of said first shaft when power is lost.
- [c11] 11. The parking brake as set forth in claim 9 wherein said electronic means includes a solenoid for engaging and disengaging said engagement surface.
- [c12] 12. The parking brake as set forth in claim 11 wherein said solenoid can be released by a manual mechanical means.
- [c13] 13. The parking brake as set forth in claim 12 wherein said manual mechanical means includes a manual adjuster for mechanically moving said solenoid.
- [c14] 14. The A parking brake as set forth in claim 6 wherein said locking mechanism is actuated by mechanical

means.